



University of Massachusetts Amherst  
**ScholarWorks@UMass Amherst**

Sustainability Reports & Plans

Sustainable UMass

2014

# Sustainable UMass ADQUAD External Review Final Report

Bonny Bentzin  
*UCLA*

Robert Koester  
*Ball State University*

Matt St. Clair  
*University of California*

Follow this and additional works at: [https://scholarworks.umass.edu/sustainableumass\\_reportsplans](https://scholarworks.umass.edu/sustainableumass_reportsplans)



Part of the [Sustainability Commons](#)



This work is licensed under a [Creative Commons Attribution 4.0 License](#).

Bentzin, Bonny; Koester, Robert; and St. Clair, Matt, "Sustainable UMass ADQUAD External Review Final Report" (2014).  
*Sustainability Reports & Plans*. 15.  
Retrieved from [https://scholarworks.umass.edu/sustainableumass\\_reportsplans/15](https://scholarworks.umass.edu/sustainableumass_reportsplans/15)

This Article is brought to you for free and open access by the Sustainable UMass at ScholarWorks@UMass Amherst. It has been accepted for inclusion in Sustainability Reports & Plans by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact [scholarworks@library.umass.edu](mailto:scholarworks@library.umass.edu).

**Sustainable UMass ADQUAD External Review Report:**

***Findings, Observations, and Recommendations***

*Draft September 15, 2014*

*Updated and Finalized October 29, 2014*

External Review Team Members:

Bonny Bentzin

Robert J. Koester

Matt St. Clair

## Table of Contents

I. Executive Summary .....	3
II. Project Overview:.....	5
III. Review Process .....	5
IV. Findings-of-Fact.....	6
II. Observations.....	7
III. Recommendations: .....	9
V. Additional Reflections and Responses to Specific Questions Not Covered Elsewhere .....	16
Appendix A: Sustainable UMass (Amherst) ADQUAD review -Project Plan.....	18
Appendix B: Site Visit Meeting Schedule .....	21

## I. Executive Summary

Through the breadth and excellence of its operational and academic activities, the Sustainable UMass program has had considerable success in the past five years; achieving a position of prominence and leadership in the sustainability arena as reflected in national higher education awards.

Remarkably, this has been spearheaded by a relatively small group of dedicated people working together as an informal, ad hoc coalition of personnel in Physical Plant, Campus Planning, Auxiliary Services, Transportation Services, the College of Natural Sciences, the College of Social and Behavioral Sciences, the Isenberg School of Management, the Library, and University Relations, among others.

However, as currently configured, this coalition alone will likely NOT be able to deliver the next level of necessary sustainability initiatives. For Sustainable UMass to maintain its front-running status, a more supportive set of emergent organization practices and operational arrangements must be set in place along with a public commitment to sustainability to be made by the Chancellor and his leadership team.

As noted in the *Findings, Observations and Recommendations* of this report, such transformation must be integrated with the university's current planning process; specifically, the recommendations include: 1) structural reconfigurations; 2) new operational tactics; and 3) models of best practice (used at other campuses) which can assist in the development of the next steps in the Sustainable UMass program.

**Findings:** The current successes of the Sustainable UMass program provide a platform from which to build; these include:

- Early leadership and commitments from pioneers within the organization in the areas of research, academic program development, and support departments.
- Investment in strengthening core campus facilities such as installation of the new Co-Gen plant.
- Extensive student and cross-departmental involvement.
- Forward thinking programs in food systems, permaculture and dining.
- A campus culture which values experiential learning,
- A nationally-recognized Eco-Rep program.
- An innovative sustainability program in library services.

**Observations:** The current standing of Sustainable UMass as a national leader in sustainability is in jeopardy without (a) adoption of a unified institution-wide vision for sustainability, and (b) a new administrative structure to help oversee and implement a sustainability action plan.

- While senior campus leaders are generally supportive of Sustainable UMass, many remain unaware of how much the campus's sustainability depth and breadth elevates UMass Amherst as a destination of choice for prospective students.
- Senior campus leadership could be more visible and better informed about the needs and requirements for maintaining and expanding this leading program.

- The dedicated – but small – group of people that has been so successful in gaining visibility for the campus is showing evidence of fatigue from holding together a broad cross-campus coalition in the absence of adequate formal organizational structures. It has been a remarkable grassroots effort, but has reached the limits of what can be achieved without the committed support of upper administrators and a new administrative structure.
- The sustainability staff members have both the vision and expertise to continue building on the UMass Amherst successes in sustainability, but some are hesitant about engaging more fully because they do not perceive strong enough support for sustainability from above.
- There are still several significant gaps in present operational practices, notably renewable energy. Although no campus can possibly excel in every area of sustainability, low-carbon energy is a particularly important issue. It is a priority for the Massachusetts state legislature, a topic that matters deeply to young people, and an area in which UMass is poised to lead more strongly.
- There are at least 8 academic flagship undergraduate sustainability programs, and an innovative 4-year-old interdepartmental sustainability graduate program. However, there is no Ph.D.-level research degree program, and there is a gap in the broader integration of sustainability into certain areas of the academic curriculum (see recommendation 3).

**Recommendations:** Send a clear, consistent signal from the Chancellor and his university leadership team that sustainability is a major priority for UMass-Amherst. Without this high level imperative, the success to date of the Sustainable UMass program risks distraction, diffusion, dissipation; even failure.

1. As opposed to the established command and control hierarchy of university organization, the university should use a more clearly fitting ‘emergent’ organizational structure to coordinate the interaction and advancement of the academic and operational sustainability programs.
2. Empower the faculty and professional staff members to implement an integrated 3-5 year campus-wide action plan for sustainability.
3. Showcase more effectively the existing suite of strong academic offerings (e.g., by establishing a ***School of Sustainability and the Environment***), and invest in new programs to maintain leadership in the national academic sustainability conversation (e.g., establish a sustainability literacy general education requirement and a Ph.D. program in Sustainability).
4. Adopt bold near-term GHG reduction targets, take a comprehensive approach to energy management, and develop an aggressive low-carbon energy system for the campus.
5. Integrate sustainability more thoroughly into current strategic planning work. In particular, as the campus embarks on JTF SO Phase 3 planning, require each unit to include a section on sustainability in its unit-level strategic plan.
6. Select a set of sustainability metrics to help drive how the university allocates resources (RCM) to ensure that the new campus model for resource allocation results in measurable efficiency in the use of space and utilities across all campus departments.
7. Integrate sustainability-related responsibilities into all job descriptions and/or personnel evaluations; beginning at the senior level.

## II. Project Overview:

UMass Amherst uses an Administrative Quality Assessment & Development Review (ADQUAD) process for its departments to benchmark efficacy and determine goals and priorities for future development. This process engages external teams of experts to review departments, to assess the current-state of operational performance, and to provide recommendations for enhancing that performance well into the future.

The Office of the Chancellor requested that the Sustainable UMass program be reviewed under this process. The Sustainable UMass review is an addition to a separate prior review of Physical Plant Operations, which currently houses the university's Sustainability Manager and serves as the home for oversight and coordination of sustainability in operations. In addition to this sustainability management on the operations side of the house, the UMass Sustainability program is supported more broadly by a number of faculty and staff in funded (and unfunded) positions across the campus.

## III. Review Process

This review involved collaboration between internal and external teams.

The internal team gathered and made available copies of many UMass materials, including the:

- “self-study” of Sustainability
- departmental organization charts
- AASHE STARS submission
- strategic planning documents

The external team used these materials to frame its follow-on, two-day campus visit which included meetings with over thirty-four (34) faculty, staff, senior administrators and students, and five (5) follow-up phone calls with individuals who were unavailable at the time of the campus visit. All these meetings were guided by three key questions posed by the external review team:

1. *What are several things worth celebrating about your institution's sustainability accomplishments to date?*
2. *What are the most pressing concerns regarding sustainability and/or the barriers you encounter in your role as you work to advance sustainability for UMass?*
3. *What is your vision of the sustainability opportunities for UMass in the future?*

And these were supplemented occasionally with area-specific questions arising out of the answers provided by the interviewees. The compilation of this report includes:

- **Findings-of-fact** from shared materials, interviews and question-and-answer follow-up;
- **Observations** regarding the threads of continuity and patterns of opportunity that would seem to reach across disciplinary areas within the day-to-day operations and to be driven by the long-range visioning and Strategic Planning of the institution; and
- **Recommendations** for taking next steps to advance the work of the university community—with citations of known **best-practices** when appropriate.

See **Appendix A** for the project plan, and review-team membership.

See **Appendix B** for the list of interviewees and campus-visit schedule.

## **IV. Findings-of-Fact**

### **Numerous Best Practices in Sustainability are Currently Employed at UMass**

The Sustainable UMass program has significant strengths that have been developed and supported by a committed team of senior administrators, faculty, staff and students. The review team was impressed with the long-standing cross-departmental collaborations which are evident; a noteworthy achievement for an institution of this size and complexity. Moreover, UMass has chosen to actively leverage its impact on the Commonwealth, by using a regional focus as the spring-board for action—rather than using the more common emphasis of higher-education on “going global” as a first-stated priority.

Examples of observed successes include:

#### **Administration and Coordination**

- Strong collaboration between committed individuals and their departments, whose leadership and resource investments are managed organically. This includes early recognition of the importance of developing key support structures such as communications, and a culture of fostering those talented individuals who have been willing to lead the efforts to date.
- A “new” institutional leadership that is aware of, and responsive to, the existing organically-managed sustainability culture and the more traditional long-standing silos of command and control organizational reporting and management.
- Proactive state-level government relations, with regional emphasis.
- Extensive involvement in the near-surround community at varying levels of coordination, with significant potential for measurable ‘returns’ to the community and visibility for the institution as the basis for a coordinated community relations program which can feature and build upon the Sustainable UMass program.

#### **General Operations Practices**

- Installation of a Co-gen plant to improve operational efficiency and eliminate the use of #6 fuel.
- Installation of multiple electric-vehicle charging stations, adoption of a vehicle purchasing policy, and a fleet that now includes hybrids.
- Building of LEED Silver buildings and implementation of green building design features such as rain gardens and green roofs; largely on new so-called “integration” buildings.
- Development of targeted communications materials including: a special edition of the alumni magazine, an admissions insert, and an annual report from operations.

#### **Dining Services**

- Construction of permaculture gardens in multiple prominent locations which are developed and maintained through an extensive volunteer network.
- Sourcing of local/regional foods for the dining facilities.
- Use of regionally-scaled purchasing power to create markets for sustainable food products.
- Leveraging outside grant funding to build strategic collaborations with neighboring colleges and K-12 school districts to create a robust regional sustainable food system. This research will continue to have impacts far beyond the campus.
- Deployment of educational signage in dining halls.

### Curriculum Development

- Provision of mini-fund grants of \$1000 to faculty who integrate sustainability into a new or existing course; few large, public research universities have successfully developed programs to incentivize integrating sustainability into the curriculum across disciplines.
- Creation of an Eco-Rep program and a related course for peer-to-peer outreach and education; the size and scope of the course and designated eco-reps in the residence halls make this one of the best models in the country
- Development of early leadership in curricula and a formal academic program.
- Emphasis on experiential learning as the key to preparing students for professional careers.

### Library Activities

- Promotion of sustainability in university libraries; providing national leadership in this area.
  - Established a Sustainability Fund.
  - Acquired support from 3,400 individual donors.
  - Received a national development award from the American Library Association.

### Student Leadership

- Students who have successfully pushed many of the sustainability achievements.
- Sustainable UMass makes UMass-Amherst a “destination of choice” for the best and brightest students.
  - See Eco-Rep program above.
  - See Dining Services program above.

## V. Observations

### Strategic Planning

- The university is two years into a three-year Strategic Planning process. Members meeting with the external review committee had differing levels of understanding regarding that process, its time-frame, their role in it, and the level to which sustainability *is/has been/will be* included.
  - The goal of that plan for this academic year is to complete unit-level strategic planning which will reinforce and support the establishment of the University of Massachusetts/Amherst as a “destination of choice” and an “investment of choice”.
- The university in the last seven years has undergone considerable change at the highest administrative level. Given that recent history, the faculty and staff interviewed seemed to have a level of uncertainty about how far to push their respective roles and activities. At the same time, they are beginning to feel a sense of confidence in this new leadership and the stated commitment to a ten-year window of guidance for the transformation for the institution.
- Moreover, university leadership recognizes the legacy of past practice and the need for new engagement and for working across the command and control organizational silos in a more fluid manner. At a large, complex university, this is both a challenge and a remarkable promise.
- Senior leadership recognizes that the sustainability initiatives —which historically have emerged at the grassroots level across areas which heretofore had not communicated or interacted much at all — must now move from a *club-like* sense of partnership and commitment to a more *organizational* commitment in which some form of matrix administration can be used to serve



the next wave of sustainability initiatives. This would provide the university with the sense of stability needed to maintain its current leadership position and grow its competitive advantage.

- The opportunity for leadership from academic affairs is recognized as critical to the transformation and expansion of the university's sustainability efforts. Early efforts in curricular development in specific departments and colleges have been successful, but a cohesive institutional approach from a neutral convener is necessary for further progress.
- Successes to date have been led by a core group of faculty, staff, students and administrators; fostered by a culture of mentorship, the training of staff and students, and the provision of many student experiential learning opportunities offered by a diverse set of departments.
- There is a strong sense of pride and accomplishment, as well as a collegial approach to getting work done. There is also evidence of fatigue from holding this broad network together through informal organization, as well as a sense of urgency to focus solely on "short-term, visible wins"; this undermines the longer-term need to develop a programmatic foundation and organizational structure which will enable the next wave of transformational achievements.

### Summation

- Sustainability leadership and coordination, which is currently personality-based, needs to become more structurally institutionalized.
- Sustainability up to this point has been seen as a "topical opportunity" rather than a strategic "transformational program."
- Sustainability as a core value can fuse the education, research, and outreach missions.
- Sustainability adds value for all by modeling teamwork, innovation, and facilitation skills.
- Sustainability requires an alignment with the Governor's and legislature's priorities to attract funding; issues of water, food safety, and climate are priorities for the state, so leadership on these issues should help to assure continued state funding for the university.
- Sustainability facilitates the dual educational goals of promoting experiential learning and the appreciation of an interdisciplinary approach to solving today's problems.
- A robust sustainability program can support directly the institutional goals of being the "destination of choice" and a "destination of investment".

## VI. Recommendations:

### Create an Institute for Sustainability Integration:

- The institution must move from its current ad hoc informational and tactical activities to a more strategic engagement of sustainability by institutionalizing a matrix of organizational support and interaction across and within the full fabric of the academic community.
- That matrix should report to, or in some way, have direct access to the Chancellor, the Provost, and/or the Vice Chancellors.
- That matrix should take the form of an overarching entity, connecting the many diverse areas of the university with a formal charge and foundation. Examples include a highly-placed cross-cutting Institute for Sustainability or Office of Sustainability with open access and connections to all members of the university community seeking to contribute to the institution's sustainability initiatives. Example programs:
  - Dual Offices of Sustainability
    - Pratt Institute – Two different Directors of Sustainability:
      1. The Academic Director of Sustainability (ADOS) works collaboratively with the Operational Director of Sustainability (ODOS);
      2. This model's success depends on the personalities and long-standing interaction of the current ADOS and ODOS office holders.
  - Institute Model: Initiative Approach – Housed in the Provost's Office
    - University of British Columbia – <http://sustain.ubc.ca/our-commitment/ubc-sustainability-initiative#central>. This central office, led by an Associate Provost for Sustainability, oversees all University Sustainability Initiatives including communications and engagement activities and the work of the Center for Interactive Research on Sustainability. Additional supporting structures include a Teaching, Learning and Research Office, a Communications and Community Engagement Office and an Operational Management Group comprised of senior administrators from the major operational and auxiliary services departments. This structure has evolved over time.
  - Institute Model: Overarching Approach
    - Global Institute of Sustainability (GIOS), Arizona State University - <https://sustainability.asu.edu/about/about-the-institute.php>. GIOS is intended to be an institute that is both a concept and a physical place. It supports four primary pillars of activity: Research, Academics, Outreach and Engagement, and Operations. An Executive Director oversees GIOS, while Directors or Deans responsible for the key areas give GIOS dotted reporting lines to the Provost, CFO, and Research Office. GIOS houses a School of Sustainability that has its own degree program, but GIOS also works with other departments to develop sustainability-related academic programs in other schools and colleges. It includes administrative support such as fund-raising, business administration, and marketing and communications for all activities within GIOS. This model was developed by a President's Initiatives Office that has evolved heavily since

its development, with the development structure shifting due to the influence of the leadership style of its Executive Director.

- Secretariat Model
  - Ball State University - [www.bsu.edu/cote/](http://www.bsu.edu/cote/). The Council on the Environment (COTE) consists of some 35 representatives appointed by the Provost – on recommendation by each represented entity/group. Representatives include every Vice President, each of the College Deans contract faculty, student government, student clubs, and local community constituents. COTE serves as the clearinghouse for sustainability activities campus-wide. COTE is advisory to the university administration and formalizes recommendations through formal resolution. The day-to-day administration is provided by an existing unit – the Center for Energy Research/Education/Service (CERES).

### Organizational Approaches

- All leaders at every level must move from serving as *representatives* of the sustainability program, whereby they passively report out on achievements of staff, to serving instead as *agents of engagement* who take direct ownership of, and work to impact, the opportunities presented through their respective leadership roles.
- Resources must be identified that can align with the many action plans to be promoted through a matrix organization.
- More direct access up the chain of command and across disciplinary boundaries will assure an immediacy of decision-making appropriate to a campus culture of nimble, pro-active leadership.
- Raising sustainability literacy at ALL levels of the organization
  - A diverse team of faculty, staff, students and administrators should be sent to a host of national sustainability conferences such as those of AASHE and the ACUPCC
  - Senior administrators should reach out to peers at other institutions, attend executive education programs, such as the Executive Education for Sustainability Leaders program at Harvard University, and they actively should review the UMass STARS submission
  - The alignment of sustainability with the strategic planning goals of UMass should be clearly articulated to faculty, staff, students and external communities
- Every level of University leadership should signal that sustainability is a priority for the university as a whole.
  - Sustainability should be made more central to the ongoing strategic planning process
  - Phase 3 of the Strategic Plan must include sustainability in the unit planning template that every department completes, especially since it was stated that anything not included in the current strategic plan will not be a priority for resource allocation
    - Penn State University has an excellent model for unit-level strategic planning on sustainability: <http://sustainability.psu.edu/strategic-planning/>
  - Sustainability measures should be developed and included as an indicator of success through-out the organization. For example: Capital Projects' reports typically include detail regarding project schedule and budget; including sustainability success measures would elevate and prioritize sustainability for the entire team, rather than placing the burden on a single individual.

- Developing tactical and strategic advisory and implementation bodies is essential. This should include creating a separate executive committee of the Chancellor’s Sustainability Committee (CSC) to hear mature proposals for sustainability implementation that the CSC develops.
- Integrate sustainability-related responsibilities into all job descriptions and/or evaluations. This should begin at the senior level.
- Establish expectations around a culture of sustainability.
  - Include details on institutional sustainability commitment and achievements in the orientation for new faculty, staff, and students. Example program:
    - University of North Carolina, Chapel Hill.  
<http://www.sustainability.unc.edu/NewsEvents/MakingtheWorkplaceMoreSustainable>.
    - Web materials cite sustainability as a core value and top-level priority; workshops on “Making the Workplace More Sustainable” are regularly scheduled. Participants can become ‘green events’ certified.

#### Administration and Coordination

- Adopt a set of metrics that explain how and why UMass cares about sustainability. Example programs:
  - University of California – Santa Cruz Annual Sustainability Report  
<http://sustainability.ucsc.edu/governance/files/Annual%20Sustainability%20Progress%20Report%202012-13.pdf>
    - Short, high-level annual progress report. See especially the table of metrics.
  - University of California - Berkeley Annual Sustainability Report  
<http://sustainability.berkeley.edu/reports>
    - Detailed, more lengthy report with elegant infographics for all metrics.
- Create a Master Plan with a sustainability vision drawn from the strategic plan. This should be future-focused rather than just citing past sustainability activities.
- Establish an Annual Chancellor’s Sustainability Summit with the Chancellor presenting annual Chancellor’s Sustainability Awards. Example programs:
  - University of California – Berkeley Sustainability Summit [<http://sustainability.berkeley.edu/cacs/cacs-sustainability-summits>] and Awards [<http://sustainability.berkeley.edu/cacs/cacs-sustainability-awards>]. For 10 years, UC Berkeley’s Chancellor’s Advisory Committee on Sustainability has been hosting annual sustainability summits where—among other things—the Chancellor presents sustainability awards to students, faculty, and staff.
  - Harvard University Green Carpet Awards -<http://green.harvard.edu/campaign/harvard-green-carpet-awards>. The Green Carpet Awards is a biennial celebration of Sustainability Leaders at Harvard. This event, in tandem with Harvard Heroes, recognizes the outstanding efforts of teams and individuals across Harvard to create a healthy, more sustainable campus. It is an opportunity to meet and network with those who are championing sustainability across campus, as well as to celebrate key projects that are contributing to greenhouse gas emissions and energy reductions across campus.
  - Arizona State University, President’s Award for Sustainability - <https://cfo.asu.edu/hr-sustainabilityaward>. This annual recognition program cites cross-stakeholder projects representing operations, academics, research and community engagement areas of the university.

- Continue to play a regional/national convener role to advance sustainability scholarship and action. Example programs:
  - University of California – Santa Barbara Central Coast Sustainability Summit <http://www.sustainability.ucsb.edu/centralcoastsummit/>. The Central Coast Sustainability Summit is an annual conference whose goals include sharing best practices and building collaborations to address complex environmental issues in California central coast region. The event brings together key stakeholders from local government agencies, chambers of commerce, non-profit organizations, campuses, utility companies, and private companies.
  - Ball State University Campus Sustainability Conference  
This biennial conference series grew out of a need by the university to learn from others and became the national go-to event for many years. Now that AASHE is hosting an annual meeting BSU has shifted its conferencing efforts to the regional market.
- Reduce “town gown” issues, increase program diversity and student success, and reduce long-term building needs by:
  - Considering the ‘year-round’ school model and/or expand evening course offerings – to achieve more productive building use, increase opportunities for students and distribute economic and regional infrastructure impact across the year.
    - Bunker Hill Community College – expanded course offering until midnight to better meet student needs and utilize space efficiently.
  - Consider diverse, multi-use living/learning communities that integrate “lifetime learners” (tapping into the growing retirement community) with student housing and affordable staff housing. Example program:
    - University of California – Davis Net-Zero Energy mixed-use housing community. <http://westvillage.ucdavis.edu/index.html>
      - UC Davis West Village is the largest zero-net-energy planned community in the country and includes both faculty and student housing as well as a community college campus.
- Continue to leverage impact on the Commonwealth and the Region.
  - Improve the tracking, coordination and support for community programs and the many UMass individuals advancing good work in the community. Example programs:
    - Grand Valley State University, Office of Community Engagement - <http://www.gvsu.edu/community/funding-opportunities-32.htm>. Multi-tiered approach to a coordinated effort connecting campus expertise to community needs, including seed project funding for faculty and students.
    - Penn State University, Sustainable Communities Collaborative - <http://sustainability.psu.edu/sustainable-communities>. Connects University Park faculty, students, and staff with local communities to address sustainability challenges through an engaged, collaborative effort.
    - Arizona State University, Sustainability Cities Network - <http://sustainablecities.asu.edu/> and Walton Sustainability Solutions Initiative - <http://sustainabilitysolutions.asu.edu/>. Program to convene and coordinate planning and solutions among over 100 communities, and an endowed program to catalyze replicable solutions to sustainability challenges.
  - Connect to the numerous workforce development, green technologies and startups programs under development in the area.

- Consider adapting the “Ashoka Changemaker” model to foster innovation for programs in the community. (<http://ashokau.org/programs/changemaker-campus/>) The program recognizes universities providing social innovation education; numerous universities are now listed.
- Recognize staff members who qualify as your “first alumni” on the campus; many attended UMass and now are working on campus. Leverage this as a funding (friend-raising) and promotional opportunity. Develop ways to connect ALL levels of staff to the successes and cool things on campus. Put a human face on all the contributors to the campus operations and learning.
  - Consider departmental open houses; introduce projects/programs that encourage cross-area collaborations for campus projects. Tell the stories of where these successes are.
  - Track staff contributions by implementing an annual staff-activity report. This also will quantify experiential learning and measure staff involvement in sustainability.
- Expand strategic campus-wide policies for operational areas, such as hardscape and landscape management practices, and departmental operations. Locate these policies in a central portal for increased accessibility. Develop a public campus sustainability portal that tracks metrics and provides data for use in the learning environment.
- Integrate sustainability accounting into the annual system-wide financial savings report.

## Academics

- Institute a General Education requirement for sustainability to “create a citizenry that is sustainability literate.” Many institutions are working on this, but the ideal formula has yet to be discovered. Example programs:
  - WISER Program at BSU  
This curricular initiative clarifies course offerings by content and enables students to achieve balance in aggregating the following common core course sequences: **Writing**, **International Awareness**, **Service and Civic Engagement**, **Environmental Awareness and Sustainability**, **Respect for Human Liberty and Diversity among Peoples and Cultures**  
<http://cms.bsu.edu/academics/centersandinstitutes/cote/sustainability/wiser>
  - Arizona State University, ASU 101 program –  
[http://www.asu.edu/courses/asu101/documents/syllabus/asu101\\_syllabus\\_DRAFT\\_053\\_007\\_v3.htm](http://www.asu.edu/courses/asu101/documents/syllabus/asu101_syllabus_DRAFT_053_007_v3.htm). An example of a broad scale attempt by integrating the option of a sustainability module into a library of modules that faculty self-selected to include as part of a first-year experience. An institutional decision to not outline clear execution requirements and content resulted in a varying level of success.
- Incentivize and recognize faculty and departments who pursue interdisciplinary sustainability research and teaching and who support campus sustainability efforts. Example program:
  - University of California – San Francisco’s Academic Senate Guidelines for Documenting Sustainability Activities Associated with Faculty Merits and Promotions  
<http://senate.ucsf.edu/2012-2013/v6-susttf-SustainabilityGuidelines-FinalCAP-Accepted.pdf>
    - “...faculty pursuits to protect the environment and support sustainable practices in support of these goals should be documented in merit and promotion activities.”

- Expand offerings in sustainability as part of the UMass departmental requirement for developing integrative student experiences.
- Provide resources for “release time” for campus operations personnel to play a more active role contributing to student learning opportunities.

### Operations

- Expand the climate action plan to include interim GHG reduction goals—the 2050 neutrality goal is too far out to compel urgent action now. UMass should at least adopt the state’s goal.
- Establish energy performance targets for new construction. Example programs:
  - UC Merced - [http://uc-ciee.org/images/downloadable\\_content/buildings/ACEEE\\_2010\\_11\\_725\\_UCMercedZeroNetEnergy.pdf](http://uc-ciee.org/images/downloadable_content/buildings/ACEEE_2010_11_725_UCMercedZeroNetEnergy.pdf) - has used aggressive energy performance targets for every building on its campus and its buildings use 30-50% less energy than average university buildings in California.
  - The University of California system - <http://uc-ciee.org/library/a/709/61/nested> - has developed energy performance benchmarks based on UC Merced’s best practices and this year will set energy performance targets for all UC campuses to use in designing new buildings.
  - University of Oregon Model for Sustainable Development - <http://uplan.uoregon.edu/subjects/Sustainability/OMSD/OMSDHomepage.htm>. “The University of Oregon will cap the total campus energy use from new development projects. This goal will be achieved by taking a systematic campus-wide (as opposed to building-by-building) approach. New development projects will be required to achieve a state-of-the-art energy performance level—an Advanced Energy Threshold. Also, energy-savings measures will be implemented in existing facilities to offset the resulting energy needs generated by the new projects. This will result in a **net zero increase in campus energy use from new development.**”
- Establish a cohesive approach to energy management utilizing tactics such as distributive billing (an allocation for colleges’/departments’ energy use), communications and behavior change to connect the roles of operators and occupants and to develop comprehensive solutions to reduce individual building usage. This includes the development of a campus-wide energy dashboard and developing a fully-staffed controls engineers unit as well as hiring continuous commissioning staff. Example programs:
  - University of California – Berkeley <http://oe.berkeley.edu/energy-management-program>. The Energy Management Initiative establishes a high-profile Energy Office to track, oversee, and manage energy use; *offers financial incentives to Operating Units to reduce energy usage*; implements an outreach campaign focused on motivating individuals to reduce energy use; and establishes a Campus Energy Policy to articulate guidelines and standards relating to all aspects of campus energy use.
    - Note: Stanford University established a similar program initiated by the Provost to mitigate excessive space requests through an accurate cost/benefit accounting for usage - [http://lbre.stanford.edu/sem/energy\\_services\\_group](http://lbre.stanford.edu/sem/energy_services_group).
  - Additional examples of comprehensive energy management teams include the University of Michigan - <http://energymanagement.umich.edu/> - and the University of Minnesota - <http://www.facm.umn.edu/about/energy-management/forms/index.htm>.
- Use integrated design for new buildings: assign a building engineer to be part of the design process from the ground up, include other operators in selecting features (i.e: green roofs, rain



Sustainable UMass ADQUAD External Review Report:  
*Findings, Observations, and Recommendations*

gardens, landscaping), and expand renewal efforts to existing buildings to address issues such as packaged window A/C units that are an energy drain in the summer and the winter.

- Mandate landscaping irrigation systems (which currently are value engineered out of new buildings)
- Continue to diversify and expand renewable energy developments. Example program:
  - Arizona State University (ASU) - <https://cfo.asu.edu/solar>. ASU's is the most expansive portfolio of diversity in solar execution and has led to an extensive understanding of legal and contractual requirements for solar projects.
- Invest in cross-campus solid waste-reduction and behavioral change programs. Example programs:
  - Penn State University – <http://sustainability.psu.edu/mobius>. One of the higher-education leaders in waste diversion, Penn State's program deploys good management practices inclusive of community engagement and student learning activities.
  - Boston University - <http://www.bu.edu/sustainability/what-were-doing/waste-reduction/recycling-at-bu/>. BU uses a cohesive communications effort combined with clearly defined metrics and tactics.
  - Harvard University - [http://green.harvard.edu/search?f\[0\]=field\\_facet\\_types%3APoster&f\[1\]=facet\\_type%3APoster](http://green.harvard.edu/search?f[0]=field_facet_types%3APoster&f[1]=facet_type%3APoster). Investment in savvy marketing materials to support operational efforts.



## V. Additional Reflections and Responses to Specific Questions Not Covered Elsewhere

### Strategic Planning Process

It would seem appropriate to include an expanded description of the Strategic Planning process. This process has taken some 2 years so far and will complete its cycling this coming academic year. The current focus should be communicated more completely; the opportunity is in the distributed engagement resulting from unit-level strategic planning. Each unit-level plan should have a section on **sustainability**.

### Developing the Balanced Business Proposition

Developing sustainability programs on a university campus can pose challenges because they require coordination and collaboration across areas of the institution with dramatically different (leading) criteria for measuring success:

- For Physical Plant, Auxiliary Services and other Traditional Command and Control Operations Roles, the success is measured in budgets, and in many cases, maintaining some level of “invisibility”.
- For Academics and Student Engagement, success is measured first and foremost in attracting students and in their experience, retention and graduation rates.
- For Research, success is measured in the amount of research funding received and in advancing the notoriety and visibility of the institution through discovery and investigation.

Thus, it is essential for the entity coordinating the sustainability program to support the organization in balancing these priorities while connecting all stakeholders to the collective vision. This requires investment in coordination tactics and resources to link these potential opportunities and balance the inherent disconnect among success criteria. Three focus areas include:

- Financial:
  - Developing and managing a long-term vision that connects savings from low-hanging fruit to reduce the “payback” of more intensive, more costly financial investments.
  - Connecting traditional “operational” costs to a return on investment from educational and research outcomes to capitalize on and justify alternative funding models. An example of this includes developing a data warehouse for campus operations data for: the purposes of guiding decision-making on campus; providing data for required state, federal and evaluation bodies; and use in academic courses and the research enterprise.
- Documenting the Return:
  - Investing in a “Communications Machine.”
  - Capturing the soft returns – the stories and the impacts, even those that are strictly anecdotal. See “Non-Financial Metrics” below for example tactics.
- Recognizing Human Capital:
  - Connecting campus projects and student learning. Sample program:
    - SEED Project Warehouse at the University of British Columbia.
  - Understanding and embracing the administrative and coordination support this requires for success.
  - Mitigate mis-perceptions of roles and responsibilities on campus. Consider tactics that allow a diverse set of stakeholders to “walk in each other’s shoes” or similar approaches that foster a greater understanding of the many facets of the university as it works to meet its mission.

Also refer to Operations and General categories in the Recommendations Section of this document for additional perspectives on this topic.

### Non-Financial Metrics for Tracking Progress

Tracking non-financial metrics for progress and impact in sustainability initiatives requires a combination of capturing quantitative metrics for activities to extrapolate impact and the collection of anecdotal evidence and soft returns. This combined approach develops the breadth of impact. It's important to integrate tracking into existing systems as much as possible to ease collection and tracking. Tactics include:

- Integrate sustainability criteria into human resources staff evaluation process. Example program:
  - Arizona State University - <https://cfo.asu.edu/hr-performance>.
- Tracking volunteers – hours of student engagement, on and off campus. Example program:
  - Ball State University - The university annually gathers the cumulative hours and project activities in which students, staff and faculty have engaged in off-campus pro bono work.
- Developing a central project log. Example program:
  - Ball State University - The university uses the annual reports of the COTE membership to gather a record of achievements aligning with the STARS reporting structure.
- Develop “staff activity reports” similar to faculty activity reports, to capture the diverse role today’s staff and administrators play in enhancing the student experience.
- Graduates, degrees and courses - mechanize this process through tags that are added when course paperwork is submitted.
- Research impacts – again, mechanize this through a check box on research submissions.
- Measure singularity of recognition and commitment from the senior chain of command.
  - Track when members of the institutional hierarchy “talk off script.” This should be a goal and a measurement.

Also see other sections discussing communications and developing a culture of sustainability.

## **VI. Appendix A: Sustainable UMass (Amherst) ADQUAD review - Project Plan**

### **Internal Team (Co-chairs, Chancellor's Sustainability Committee):**

- Ezra Small, Campus Sustainability Manager (Physical Plant), [esmall@facil.umass.edu](mailto:esmall@facil.umass.edu), (cell) 413-230-9719
- Craig Nicolson, Director of Academic Sustainability Programs, Dept. of Environmental Conservation and College of Natural Resources, [craign@eco.umass.edu](mailto:craign@eco.umass.edu), (cell) 413-695-1001
- Rachel Dutton, Sustainability Manager for Auxiliary Enterprises, [rdutton@umass.edu](mailto:rdutton@umass.edu)
- Victoria Rosen, Sustainability Communications & Marketing Manager (University Relations), [vrosen@admin.umass.edu](mailto:vrosen@admin.umass.edu)
- Bill Bean, Strategic Planning Consultant (President, Green Planning and coaching), [bill@greenplanningandcoaching.com](mailto:bill@greenplanningandcoaching.com), (cell) 413-822-4456

### **External Team:**

- Bonny Bentzin (Lead), Consultant - Sustainability Strategy and Implementation, Complex Organizations, [bonny2b@gmail.com](mailto:bonny2b@gmail.com), (cell) 602-689-2598
- Robert (Bob) J. Koester, Professor of Architecture and Director – Center for Energy Research/Education/Service, Ball State University, [rkoester@bsu.edu](mailto:rkoester@bsu.edu), (cell) 765-749-1006
- Matt St. Clair, Sustainability Manager, University of California - Office of the President, [matthew.stclair@ucop.edu](mailto:matthew.stclair@ucop.edu), (cell) 510-847-5912

### **Project Overview:**

UMass Amherst uses an Administrative Quality Assessment & Development Review (ADQUAD) of its departments to benchmark efficacy and determine goals and priorities for future development. For this process an external team of experts are engaged to review departments and provide a report including a current state assessment and recommendations for the future. The Office of the Chancellor has requested that the Sustainable UMass program be reviewed under this process. This will be included as an addition to the review of the Physical Plant, which houses the sustainability operations. The scope of this review spans both the operations and academic efforts of the sustainability program and is the first time a review of this nature, spanning multiple areas and departments, has been attempted by the university. This is a tremendous opportunity to review the effectiveness, goals and objectives, services, productivity, quality, and resources of the sustainability office, as well as the full scope of Sustainable UMass on a campus-wide scale.

Sustainable UMass ADQUAD External Review Report:  
Findings, Observations, and Recommendations

**Project Schedule:**

	Date	Task	Action
Advance Work	7/25	Develop and Review Advance Materials	Internal Team: Provide self-study and SWOT analysis developed by Sustainability Committee Implementation Team.  External Team: Review material. Compile observations to inform process.
	7/25 – 8/8	Site Work Prep	Internal Team: Provide draft site visit schedule.  External Team: Develop evaluation strategy and compile input for site visit schedule. This will be accomplished through two conference calls and via email.
Site Review	8/10	Arrive in Pioneer Valley	External Team: Travel to Pioneer Valley (Some team members may arrive early). External team meeting.
	8/11-12	Site Visit	Internal Team: Provides complete schedule including lodging and meals details.  External Team: Meet with stakeholders, tour facilities. Team to meet for an hour at the end of both days to compile initial thoughts.
Develop Report	8/13 – 9/15	Draft Report	External Team: Drafts ADQUAD report including observations and recommendations. Process as follows: Notes from site visit compiled and reviewed, 2-3 conference calls to discuss and develop document (Word Doc and PPT format), team reviews and finalizes draft documents.
	09/15	Submit Draft Report	External Team: Delivers report to the unit via email and reviews via conference call. Copies go to the Vice Chancellor and Chancellor's office. Adjustments made if necessary.
	09/22	Report Feedback	Co-Chair feedback, fact checking on the report
	9/24	Submit Report	External Team submits the final report to Vice Chancellor/Chancellor. We need your feedback
	10/10 or 14	Present Report	External Team: Present Findings to Chancellor and Vice-Chancellor via Go To Meeting  (Note – this will be after they've received an award)

Sustainable UMass ADQUAD External Review Report:  
*Findings, Observations, and Recommendations*

	09/15-10/15	Action Plan Development	Internal Team: Prepares a written response to the external report and an action plan is created based on the review. Vice Chancellor comments on the report, response, and action plan. Adjustments made if necessary.  External Team: Review and comment on action plan.
	11/1	Report Finalized and Submitted	Internal Team and Vice Chancellor: Report completed and submitted to Chancellor's office. (the self-study, external review report, and action plan)  Note: all Deans owe Phase 3 plans December 15.

## VII. Appendix B – Site Visit Meeting Schedule

Sustainability ADQUAD External Review Interview Schedule, August 11-12, 2014						
Monday, August 11				Tuesday, August 12		
Time	People	Location		Time	People	Location
8AM-10 AM (8-9:45/Breakfast served) (15m break)	Ray Jackson, Director of Physical Plant (15m intro), Ezra Small; Rachel Dutton; Craig Nicolson; Victoria Rosen (Sustainability Co-Chairs)	Dukes Room, Student Union (SU)		8AM-9 AM (JH: 8-8:30/ Breakfast served) (Dir's: 8:30-9:00) (15m break)	Juanita Holler, Assoc. VC of Facilities & Camp. Services F&CS Directors: Ray Jackson (PP); Dennis Swinford (CP); Shane Conklin (AS); Jeri Baker (Trans)	Whitmore Room 358
				9AM (9-9:30)	Vice Chancellor A&F Jim Sheehan	Whitmore Room 358
10AM-11AM (10-10:45) (15m break)	Physical Plant Sustainability Staff and Student Leadership (Liz Pongratz, Kevin Hollerbach, Arianna Moscone)	Dukes Room, SU		10AM-11AM (10-10:45) (15m break)	Ludmilla Pavlova, Campus Planner & Sust. Master Plan Chair; Ted Mendoza, Cap. Project Mngr & Green Building Co. Chair; Jason Burbank, Energy Engineer	Whitmore Room 358
11AM-NOON	Auxiliary Services Sustainability Staff	Worcester DC		11AM-NOON	Andy Mangels, Associate VC of Finance & Budget Director	Whitmore Room 358
NOON-1PM	Lunch (Non-working)	Worcester DC		NOON-1PM	Lunch with Co-Chairs	Hampshire DC
1PM-2PM (1-1:45) (15m break)	Physical Plant Asst. Directors: Pam Monn, Dan McCarthy, Mark Kucinski, Jeff Bryan	Physical Plant, Room 213		1PM-2PM (1-1:45) (15m break)	Madeleine Charney, Sustainability & Research Services Librarian	Library Teaching Commons
2PM-3PM (15m break w/ refreshments)	Cheryl Dukes, Assoc. Dir. Gov. Relations (2-2:30); Eddie Hull, Student Affairs (2:30-3)	Dukes Room, SU		2PM (2-2:30)	Chancellor Subbaswamy	Whitmore, Chancellor's Office
3PM-4PM	Chris Dunn, Government Relations Director, 3-3:30 (tentative) Elena Sharnoff, CNS Communications Director, 3:30-4	Dukes Room, SU		Academic Block 3PM-4PM (refreshments)	Academic Block: Curt Griffin, Dept. Head, Env. Conservation; Christine McCormick, Dean School of Ed; Scott Auerbach, Prof, iCons Director Bill Wooldridge, ISOM, New Center for Entrepreneurship	Suffolk Room, SU
4PM-6PM	Campus Tour led by Ludmilla Pavlova (driving and walking) Begins with Ray Jackson at CHP	All Locations		4PM-5PM (4-4:45) (15m break)	Amilcar Shabazz, Faculty Advisor for Diversity & Excellence, Office of Chancellor	Suffolk Room, SU
				5PM	Wrap-up with Ray Jackson and Ezra	Suffolk, SU
<b>Post-Visit Phone Interviews:</b> John Kennedy, Vice Chancellor of University Relations & Michael Grabscheid, Exec. Director of Marketing & New Business Development: 8/19, 11 AM Ken Toong, Executive Director of Auxiliary Enterprises: 8/21, 3PM Steve Goodwin, Dean of the College of Natural Resources: TBD; Robert Feldman, Deputy Chancellor: TBD						

